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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,269	10/04/2006	Yusuke Konagai	YAMA-0133	9215
37013 7590 06/23/2011 Rossi, Kimms & McDowell LLP 20609 Gordon Park Square Suite 150 Ashburn, VA 20147			EXAMINER MONIKANG, GEORGE C	
			ART UNIT 2614	PAPER NUMBER
			NOTIFICATION DATE 06/23/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mail@rkmlp.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/585,269	KONAGAI, YUSUKE	
	<b>Examiner</b>	<b>Art Unit</b>	
	GEORGE MONIKANG	2614	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 11/585,269.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/23/11 has been entered.

### ***Response to Arguments***

Applicant's arguments filed 5/23/11, with respect to the rejection(s) of claim(s) 1-8 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yanagawa et al, US Patent 5953432 in view of Stewart, US Patent 6535610 B1.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al, US Patent 5953432, in view of Stewart, US Patent 6535610 B1 and further in view of De Vries, US Patent 6128395.

4. Re Claim 3, Yanagawa et al discloses an audio signal supply apparatus, for a speaker unit comprising a plurality of loudspeaker array units (*Yanagawa et al, fig. 6: 20-1 through 20-n*), comprising: a branching unit that branches a same input audio signal into two or more signals (*Yanagawa et al, fig. 6: the input signal is divided to the plurality of digital filters*); wherein the signals from the digital filters are submitted to all the speakers of the speaker array; but fails to disclose a first delay unit that provides a first delay for one of the branched audio signals and supplies first delay processed signals to all of the loudspeakers of array speaker unit ; a second delay unit that provides a second delay for another of the branched audio signals and supplies second delay processed signals to all of the loudspeakers of array speaker unit; a weighting unit that weighs each of the delay processed audio signals from the first and second delay units to be supplied to the loudspeakers in accordance with a provided gain coefficient for each of the delay processed audio signals; and an adding unit that adds the first and

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second delay processed signals that have been weighted by the weighting unit before being applied to all of the respective loudspeakers; wherein the one branched audio signal provides a second sound output from the array speaker unit, wherein a directional characteristic of the array speaker unit for the first sound output differs from the directional characteristic of the array speaker unit for the second sound output, and wherein the first sound output and the second sound output are concurrently output.

However, Stewart discloses a beam forming unit that comprises a plurality of delays, after which the delayed signals are weighted by a plurality of weighting units and then the signals are summed together by a summer (*Stewart, fig. 2a: 202, 204, 206, 210, 212, 214, 216; col. 4, lines 36-50 & col. 4, lines 57-65: since the signals from the delays and weighting units are summed together, sounds at a plurality of directions will be emitted*). It would have been obvious to swap the digital filters of Yanagawa et al with the beamforming unit as taught in Stewart et al for the purpose of improving the directionality of the Yanagawa et al system while reducing sidelobe amplitudes. The combined teachings of Yanagawa et al and Stewart et al fail to disclose a directivity control unit that generates the first directivity control information and the second directivity control information so that a directional characteristic of the array speaker unit obtained by the first delay differs from the directional characteristic of the array speaker unit obtained by the second delay, and supplies the generated information respectively to each of the first delay unit and the second delay unit. However, De Vries discloses a system where an electronic control unit is used to control digital filter coefficients and delay unit times that are used to determine the directivity of a speaker array (*De Vries,*

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col. 5, lines 24-47: the electronic control unit is used to set the digital filter coefficient and the delay times stored in the EEPROM, where the filter coefficients and delay times determine the directivity pattern of the speaker array). It would have been obvious to modify the delays of Stewart et al with an electronic control unit and place to store delay times as taught in De Vries for the purpose of enabling the user to easily set the delay times in the Stewart et al and ultimately the Yanagawa et al system.

5. Claims 1-2 & 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al, US Patent 5953432, Stewart, US Patent 6535610 B1 and De Vries, US Patent 6128395, as applied to claim 3 above and further in view of Hatae, US Patent 5675655.

6. Re Claim 1, the combined teachings of Yanagawa et al, Stewart et al and De Vries disclose the audio signal supply apparatus according to claim 3, further comprising: a storage unit that stores the first control information (De Vries, col. 5, lines 24-47: the electronic control unit is used to set the digital filter coefficient and the delay times stored in the EEPROM, where the filter coefficients and delay times determine the directivity pattern of the speaker array), wherein the directivity control unit instruction (De Vries, col. 5, lines 24-47: the electronic control unit is used to set the digital filter coefficient and the delay times stored in the EEPROM, where the filter coefficients and delay times determine the directivity pattern of the speaker array), also the gain control coefficient and supplies the gain control coefficient to the weighting unit (Stewart, fig. 2a: 210, 212, 214, 216; col. 4, lines 57-65); but fail to disclose setting the directional

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characteristic of the array speaker unit as a narrow directivity, and the second control information, which sets the directional characteristic of the array speaker unit as a wide directivity. Hatae discloses the ability to provide a wide directivity controlled output and a narrow directivity controlled output (Hatae, col. 4, lines 50-54). It would have been obvious to set the delays of Stewart et al to determine the directivity of any of the given speakers in Yanagawa et al (Yanagawa et al, fig. 6: 20-1 through 20-n) to be wide directivity, narrow directivity respectively as taught in Hatae (Hatae, col. 4, lines 50-54) or any combination of wide, narrow directivity as seen fit by Yanagawa et al and Stewart et al for the purpose of providing sounds to a multitude array of listeners with different hearing capabilities within the same space.

Re Claim 2, the combined teachings of Yanagawa et al, Stewart et al, De Vries and Hatae disclose the audio signal supply apparatus according to claim 1, wherein the amount of delays obtained by the second is 0 or an equal amount (Hatae, col. 6, lines 53-60; col. 6, line 65 through col. 7, line 4) for the purpose of minimizing the ambient noise that can affect the directivity of the speakers.

Claim 4 has been analyzed and rejected according to claim 3.

Claim 5 has been analyzed and rejected according to claim 2.

1. Re Claim 6, the combined teachings of Yanagawa et al, Stewart et al, De Vries and Hatae disclose the audio signal apparatus of claim 3; a frequency property correction unit that corrects frequency property of audio signals (De Vries, col. 3, lines 33-53).

Claim 7 has been analyzed and rejected according to claim 1.

Re Claim 8, the combined teachings of Yanagawa et al, Stewart et al, De Vries and Hatae disclose the audio signal supply apparatus according to claim 4, wherein the directional characteristic of the array speaker unit obtained through the first delay overlap with the directional characteristic of the array speaker unit obtained through the second delay (*Hatae, fig. 5; fig. 7: 202-205; col. 7, lines 29-37*) for the purpose of creating a dynamic system.

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE MONIKANG whose telephone number is (571)270-1190. The examiner can normally be reached on 9:00-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GEORGE MONIKANG/  
Examiner, Art Unit 2614

6/16/2011

**/Devona E. Faulk/**  
**Primary Examiner, Art Unit 2614**